EARTHQUAKES IN MONTANA.

Mr. H. P. Dick, Observer at Kalispell, Mont., sends a clipping descriptive of an earthquake on the west shore of Flathead Lake, Mont., in latitude 48° north, longitude 114° west, from which we make the following extract:

For years occasional earthquake shocks have been noticed on the west shore of Flathead Lake, seeming to occur most frequently and be most perceptible in the vicinity of George Stanford's place about twenty miles south of Kalispell. They have never been heavy enough to do any damage. * * * There was another one last Friday afternoon that appears to have extended over a considerably greater distance than most of the previous ones; or at least it was noticed over a much greater distance. * * *

It is supposed that the shock affected a narrow strip of country on a line running from Foy's to Flathead Lake at a point several miles down the west shore.

The tremor was observed at a number of specified places on the west shore of the lake, but not at other places, so that we have here a very interesting case of local earthquakes evidently produced by the irregular settling or faulting of the local geological strata. Earthquakes are not a meteorological phenomenon, although many of our correspondents seem to consider them so, and it would not be proper for a meteorologist to attempt any explanation of their peculiarities. It is to be hoped that the geologists and the geological journals will give attention to them.

DUST STORMS IN BURMA AND ELSEWHERE.

A cablegram states that a violent dust storm visited Mandalay, Burma, on Tuesday, April 23, followed by a terrible rain storm. Great destruction was wrought and twelve lives were lost.

Almost every windstorm is accompanied by dust in proportion to the previous dryness and character of the soil, and is followed by rain in proportion to the moisture and temperature of the uprising atmosphere. So far as we have observed such storms in America, Africa, and Europe there are certain characteristics common to all that may possibly also be found in the storms of India. We do not usually associate a dust storm and a rain storm together; the dust storms of the Sahara are accompanied by immense black clouds, but rarely any dust. The dust storms of North America are accompanied by clouds, but are also generally followed by at least a slight rain, and frequently a heavy one. The dust whirls of central and northern India are generally described without reference to any clouds. It will be interesting to know whether this present dust storm in Burma was not simply the front of a broad mass of cool air sweeping southward in the afternoon from the hilly interior, raising the dust and the air in its front only to cool it and form cloud and rain in its rear.

THE PERMANENCE OF CLIMATE.

In the MONTHLY WEATHER REVIEW for March, 1901, page 121, we have quoted a very beautiful paragraph which we found in a charming lecture by Mr. A. F. Sims. It seems, however, that, without our realizing it, Mr. Sims was quoting from a lecture by Mr. J. R. Sage, Section Director, delivered on December 13, 1900, and published in the section report of the Iowa Weather and Crop Service for December. We regret very much that there should have been any failure to recognize the original authorship. As all of our readers know, the Iowa Monthly Review has for many years past illustrated the energy and literary ability of the dean of our Climate and Crop Service. The present little incident reminds us of the complaint made some years ago against certain passages in an astronomy written by a distinguished English astronomer. It appears that he had copied out some admirable paragraphs from our American astronomer, Newcomb, but when he came to incorporate them in his book quite forgot where they came from and concluded that they must have been original with himself.

FOG IN NEW YORK HARBOR.

We estimate that on the average the navigation of New York Harbor is seriously interrupted for about ten days in each year by dense fog. The reports for April 21, 22, and 23 state that, owing to the dense fog off the Jersey coast and over New York Bay and Harbor, scarcely half a dozen sailing vessels entered or left the port during these three days. Most of the large passenger steamers were also lost in the fog and waited a day or two outside the bar or at their docks. Only between the hours of 10 and 12 did it clear sufficiently to justify these expensive vessels in risking any attempt to move.

Even though the above press reports be somewhat exaggerated still they present matter for very serious consideration. We have in the MONTHLY WEATHER REVIEW for January, 1899, described the so-called Tugrin fog dispeller, and lately read of improved apparatus for communication through the fog; we are also told that if one can go to the topmast, or perhaps higher, he will rise above the fog; but all these devices fail to meet the real needs of the case, which require the utter abolishment of the fog.

We have no doubt but that the fog is really worse now than it was in former years and that this is due principally to the steam and smoke from innumerable chimneys. Either these must be modified or suppressed or else the wharfs of New York must be built far away from the smoke and fog of the city.

SLEET.

The Weather Bureau frequently receives inquiries as to the damage done by sleet and the frequency and geographical distribution of sleet storms. But it has always been difficult to collect together a sufficient quantity of data on this subject to justify any extensive generalizations. The following account of the sleet storm of March 11 and 12 is taken from the Report of the Michigan Section of March, 1901. The Editor will be greatly obliged to any one who can refer him to a general discussion of the frequency and severity of such storms in any part of the country. On the other hand, he would highly appreciate it if any of the section directors would communicate to the MONTHLY WEATHER REVIEW some general statistics for the respective sections.

The heavy storm of snow, sleet, hail, and wind, which prevailed most heavily in the western half of the lower peninsula during March 11 and 12, did great damage to telephone and telegraph lines, interfered with railroad traffic, and in the case of the railroads running north from Grand Rapids tied up all service for over a day. The greatest havoc occurred in the large cities, notably Detroit, Saginaw, Battle Creek, Kalamazoo, and Grand Rapids, where telephone poles were broken down by the heavy sleet and wires thrown in a tangled mass into the streets; the damage was especially severe in Battle Creek. On March 12 most of the northern divisions of the Pere Marquette Railroad and Grand Rapids and Indiana Railway were completely blocked; railroad men say that the storm was one of the most dangerous known and the worst that they had experienced for many years; the sleet was of bird-shot size which melted as it fell and then crusted between the rails, coating and covering the steel so that the flangers had great difficulty in making headway; the ordinary snow plow was of no use whatever. The greatest difficulty occurred in the so-called snow belt on the Grand Rapids and Indiana Railway in the vicinity of Mancelona, and near Grawn and Traverse City on the Pere Marquette Railroad.